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REDIFON LIMITED

Designers and Manufacturers of Radio Communication and Industrial Electronic Equipment

BROOMHILL ROAD - WANDSWORTH - LONDON, S.W.18

Telephone: VANdyke 7281 *Telegrams:* Redifon, Put, London *Cables:* Redifon, London

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HANDBOOK

- for -

LOW FREQUENCY ADAPTOR TYPE LFA.10

(Section 7 of R.145/S.S.B. Handbook)

DRAWINGS

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LOW FREQUENCY ADAPTOR LFA.10

7.1 GENERAL DESCRIPTION (Refer drawing WDA/4228/M)

The Low Frequency Adaptor type LFA.10 is an optional accessory providing for an extension of the frequency coverage of the receiver down to 15 kc/s in four additional overlapping bands.

Two controls are carried on the front panel of the adaptor, namely a Range switch and a Tuning control with frequency calibrated scale. There is also a preset oscillator trimmer.

In the first two positions of the Range switch, designated OFF and 2 - 30 Mc/s respectively, the adaptor is inoperative and the aerial is connected direct to the receiver via switch banks SWAa and SWAgb. The filament supply is broken in position 1 (OFF) only via switch bank SWAfb and the h.t. supply is broken in both positions at switch bank SWAeb.

The aerial is connected to socket SK1 on the back of the adaptor and the output from the adaptor is taken via plug PL2 to the aerial socket SK1 on the receiver.

The filament and h.t. supplies are fed to the adaptor via plug PL1 which engages with socket SK3 on the back of the receiver.

The adaptor circuit comprises basically a pentode r.f. amplifier type 6BA6 (V1) and a triode-heptode type ECH81 (V2) operating as an additive frequency changer, the triode section functioning as a Colpitts oscillator at a fixed frequency of 2 Mc/s.

7.2 OPERATION

To receive signals in the frequency range 15 to 1990 kc/s:-

(a) Set the receiver Range switch to the .015 - 2 Mc/s position (i.e. the same position as for the 2 - 4 Mc/s range but the frequency scale markings engraved in green then being applicable).

(b) Operate the other receiver controls, except for the Tuning control, as described in section 5.0.

(c) Set the Range switch on the LFA.10 to the appropriate band.

(d) Set the LFA.10 Tuning control to the frequency of the required signal.

(e) Set the receiver Tuning control to the same frequency by reference to the scale engraved in green on the main tuning dial.

(f) Accurately tune in the signal by adjustment of the LFA.10 Tuning control and not by adjustment of the receiver Tuning control.

If, when the LFA.10 is fitted, it is desired to receive a signal in the frequency range 2 - 30 Mc/s, the LFA.10 Range switch must be set to either the 2 - 30 Mc/s position or OFF. The aerial is then automatically switched direct to the receiver which can be operated in the normal manner.

7.3 CALIBRATION

NOTE:- No attempt should be made to perform any calibration check or adjustment until both the receiver and the LFA.10 have had time to thoroughly warm up.

(a) Set the receiver Meter switch to the S-METER position, the A.G.C. Off/Short/Long selector to either SHORT or LONG, the Sel/SSB selector to the 300 C/S position, the R.F. Gain control to maximum (fully clockwise), the Xtal. Cal. On/Off switch to ON, the Range switch to the 2 - 4 Mc/s position and the Tuning control to 2 Mc/s.

(b) Set the LFA.10 Range switch to the 2 - 30 Mc/s position.

(c) Accurately tune the receiver to the fourth harmonic frequency of the crystal calibrator (i.e. to 2 Mc/s) by observing the S-Meter for maximum deflection.

(d) The receiver auxiliary tuning scale should then read exactly zero; if it does not, insert a screwdriver in the Cal. Adj. aperture and move the cursor until a reading of zero is obtained.

(e) Switch the Xtal. Cal. On/Off switch to OFF.

(f) Switch the LFA.10 Range switch to the 15 - 160 kc/s position.

(g) Using a screwdriver, adjust the LFA.10 preset Osc. Trimmer control for maximum deflection on the S-Meter. The LFA.10 oscillator is now set to operate at the correct frequency of 2 Mc/s.

7.4 ALIGNING THE BAND-PASS FILTER

Refer to Fig.1.

(a) Disconnect the lead joining L3 and C5 to L1 and L2, leaving L1 and L2 connected together at point A with L3 and C5 connected at point F.

(b) Connect a resistor of approximately 500 ohms in parallel with R3.

(c) Connect a valve-voltmeter across R3.

(d) Connect a low-impedance signal generator, set to 54 kc/s plus or minus 500 c/s, between points B and C.

(e) Short-circuit points A and D.

(f) Trim C2 for maximum reading on the valve-voltmeter.

(g) Remove short-circuit from points A and D.

(h) Short-circuit points A and B.

(i) Trim C4 for maximum reading on the valve-voltmeter.

(j) Remove short-circuit from points A and B.

(k) Disconnect the lead joining L3 and C5 to earth leaving L3 and C5 connected together at point E.

(l) Remove the 500 ohms resistor from across R3 and connect it between point E and earth.

(m) Connect the valve-voltmeter across this 500 ohms resistor.

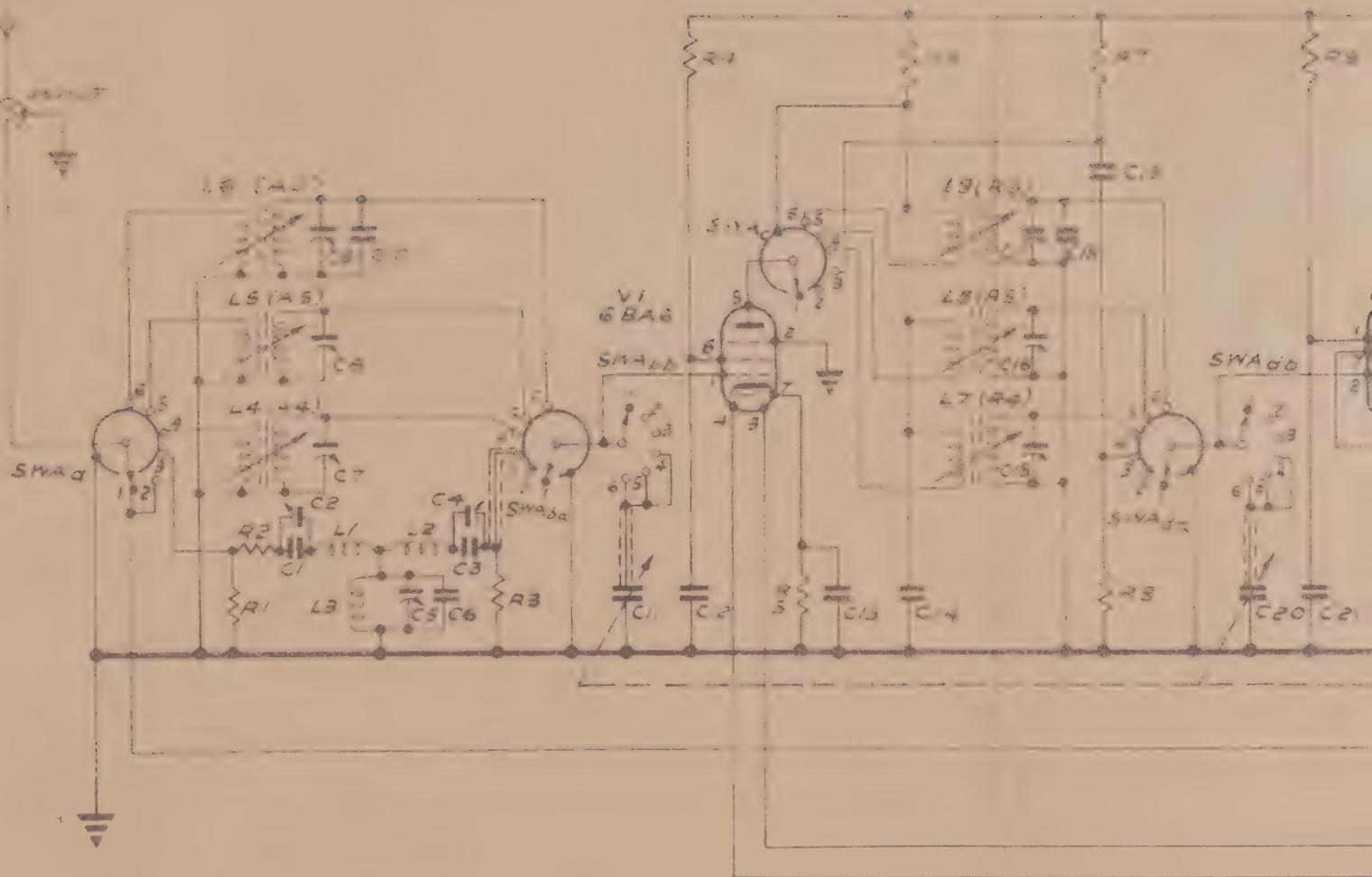
(n) Connect the signal source between point F and earth.

(o) Trim C5 for minimum reading on the valve-voltmeter.

(p) Replace the connections removed in (a) and (k) and remove the 500 ohms resistor referred to in (l).

(q) Seal the trimmers C2, C4 and C5.

NOTE:- The frequency setting of the signal generator should be kept constant for all three trimming operations.



SWA SWITCH POSITIONS.
1 OFF.
2. 2-30 MC/S.
3. 15-160 KC/S.
4. 140-375 KC/S.
5. 350-950 KC/S
6. 900-1,990 KC/S

POSITIONS 1 & 2 ON SWA a AND POSITION 3 ON SWA c ARE NOT CONNECTED TO THEIR RESPECTIVE SHORTING RINGS.

C31 MAY BE DELETED DURING TEST

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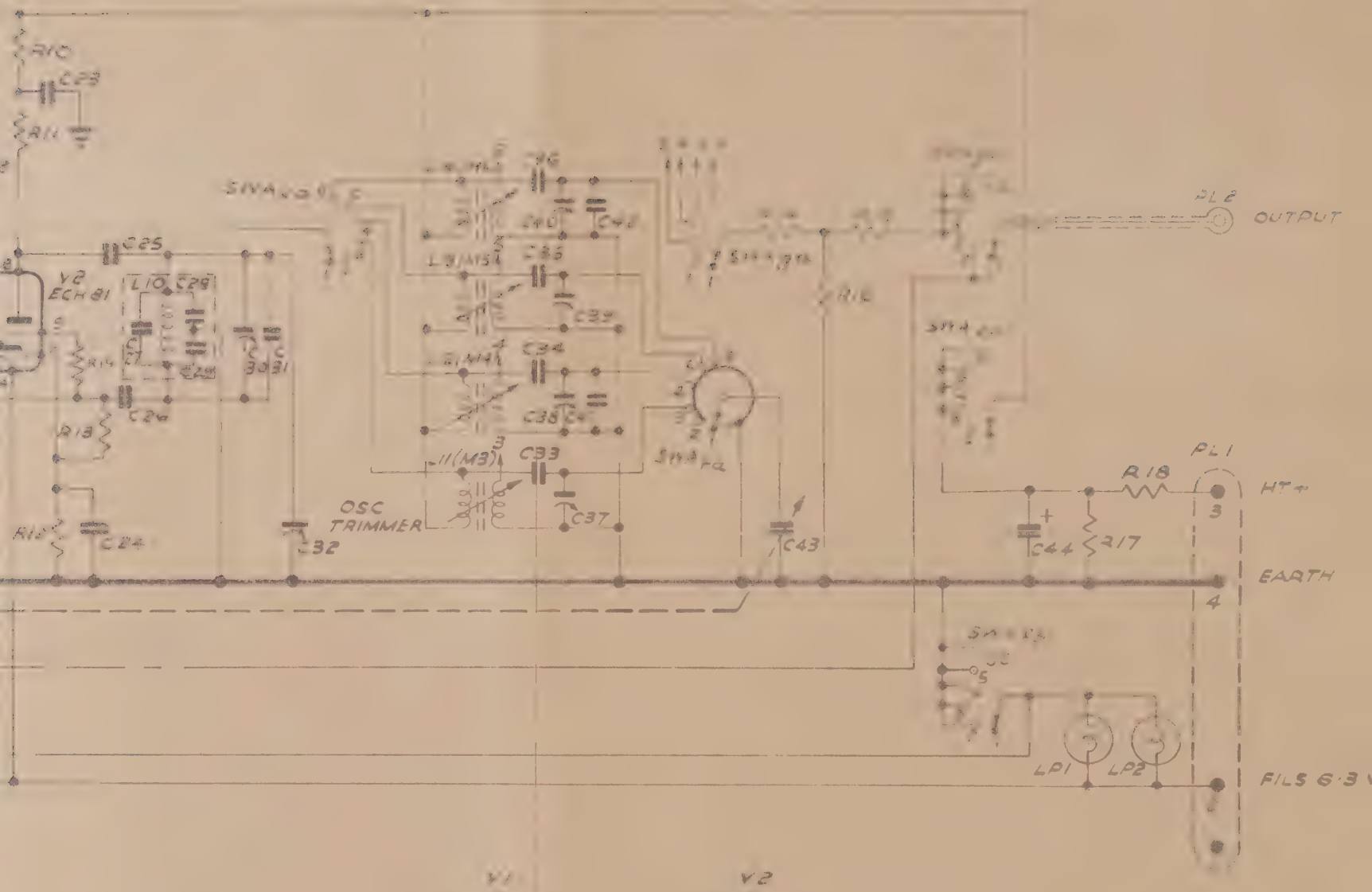

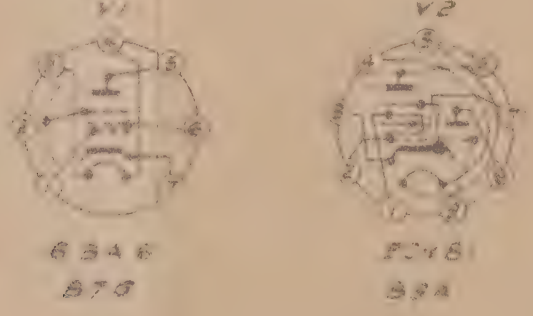

DRG. No NOA-228/M

CIR. REF.	DESCRIPTION	REF. Nº	VALUE	RATING	TOL. ±%
	CONDENSERS.				
C1	SRC Type 20B WI		20[illegible] pF	350V	1
C2	Mullard Type 7864		3-30 pF		
C3	SRC Type 20B WI		20[illegible]	35[illegible]	1
C4	Mullard Type 7864		3-30 pF		
C5	Mullard Type 7864		3-30 pF		
C6	SRC Type 10B WI		2[illegible] pF	350V	10
C7	Mullard Type 7864		3-30 pF		
C8	Mullard Type 7864		3-30 pF		
C9	Mullard Type 7864		3-30 pF		
C10	SRC Type 10B WI		[illegible] pF	35[illegible]	10
C11/42/43	Polar Type C90-03/5B 3 gang		25.1-[illegible] .7 pF	each gang	
C12	Hunts Type W49 List No.[illegible]		.1 µF	[illegible]	[illegible]
C13	Hunts Type W49 List No.B501Y with PVC sleeve		.[illegible]	15[illegible]	20
C14	Hunts Type W49 List No.[illegible]		.1 µF	250V	20
C15	Mullard Type 7[illegible]		2-3[illegible]		
C16	Mullard Type [illegible]		2-3[illegible]		
C17	Mullard Type [illegible]		2-3[illegible]		
C18	SRC Type [illegible] WI		[illegible]7 pF	350V	5
C19	Hunts Type [illegible] List No.[illegible]		.[illegible] µF	400V	20
C20	See C11				
C21	Hunts Type W49 List No.A3[illegible]		.1 µF	250V	20
C22	SRC Type 15B WI		1[illegible] pF	350V	1
C23	Hunts Type W49 List No.[illegible]		.[illegible] µF	[illegible]V	20
C24	Hunts Type W49 List No.[illegible]Y with PVC sleeve		.[illegible]	15[illegible]	20
C25	TCC Type CM[illegible]		[illegible] pF	3[illegible]V	[illegible]
C26	SRC Type 15B WI		1[illegible] pF	350V	5
C27	ERIE Type [illegible]		1[illegible] pF	7[illegible]V	10
C28	TCC Type [illegible]	Finish A	[illegible] µF	3[illegible]V	[illegible]
C29	TCC Type [illegible]	Finish A	1[illegible] pF	3[illegible]V	[illegible]
C30	Polar Type [illegible]		3-33 pF		
C31	SRC Type 15B WI		27 pF	350V	10
C32	Polar Type C91-11/1		[illegible] pF		
C33	SRC Type 15B WI		[illegible] pF	35[illegible]	1
C34	SRC Type [illegible] WI		[illegible] pF	3[illegible]V	[illegible]
C35	SRC Type [illegible] WI		[illegible] pF	350V	[illegible]
C36	SRC Type [illegible] WI		3[illegible] pF	3[illegible]V	2
C37	Mullard Type 7864		3-30 pF		
C38	Mullard Type 7864		3-30 pF		
C39	Mullard Type 7864		3-30 pF		

ISSUE [illegible]

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F. [illegible] Type [illegible]3	[illegible]...57	K.A. Jones			

COMPONENT LIST FOR:- -

I.F. Adaptor Type LFA.10

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SHEET Nº 2 contd. WD./4226/S

CIR. REF.	DESCRIPTION	REF. Nº	VALUE	RATING	TOL. ±%
C40	Mullard Type 7864		3-30 pF		
C41	[illegible]C Type 1CB WI		15 pF	350 V	10
C42	[illegible]C Type 1CB WI		20 pF	350 V	10
C43	See C11				
C44	Hunts Type L37/1 List No.JF95T with PVC Sleeve 8 pF			4[illegible] V	-0% +50%
	[illegible]STORS.				
R1	Erie Type 1		[illegible]K	—	5
R2	Erie Type 1[illegible]		3[illegible]K		5
R3	Erie Type 1[illegible]		[illegible]K	—	5
R4	Erie Type 8		1[illegible]K		1[illegible]
R5	Erie Type 8		1[illegible]C	—	[illegible]
R6	Erie Type 8		3[illegible]K		[illegible]
R7	Erie Type 8		3[illegible]K		[illegible]
R8	Erie Type 1[illegible]		[illegible]K		[illegible]
R9	Erie Type 8		[illegible]K		[illegible]
R10	Erie Type 8		1[illegible]K		10
R11	Erie Type 8		3[illegible]K		[illegible]
R12	Erie Type 8		[illegible]		10
R13	Erie Type 8		[illegible]K		10
R14	Erie Type 1[illegible]		2[illegible]		5
R15	Erie Type 1[illegible]		[illegible]		[illegible]
R16	Erie Type 1[illegible]		1[illegible]	—	[illegible]
R17	Erie Type 8		[illegible]		1[illegible]
R18	Erie Type 8		[illegible]K		[illegible]
R19	Erie Type 8		47	—	10
	VALVES.				
V1	Brimar Type CBC				
V2	Mullard Type ECH81.				

ISSUE
1. 26-4-57 R19 ADDED. c/n 9456/L
2. 24-9-57

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F. [illegible] Type [illegible]	26-4-57	R.A. Bodd			

COMPONENT LIST FOR:-
L.F. Adaptor Type LFA.10

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SHEET Nº 3 cont[illegible]

WD A/4228/S

CIR. REF.	DESCRIPTION	REF. Nº	VALUE	RATING	TOL. %
	COILS.				
L1	Filter Coil	P.25515/S			
L2	Filter Coil	P.25516/S			
L3	Filter Coil	P.25516/S			
L4	Ae Coil Range 4	P.25502/S			
L5	Ae Coil Range 5	P.25504/S			
L6	Ae Coil Range 6	P.25503/S			
L7	RF Coil Range 4	P.25504/S			
L8	RF Coil Range 5	P.25505/S			
L9	RF Coil Range 6	P.25506/S			
L10	Osc. Coil	P.25507/S			
L11	Mix Coil Range 3	P.25507/S			
L12	Mix Coil Range 4	P.25508/S			
L13	Mix Coil Range 5	P.25514/S			
L14	Mix Coil Range 6	P.25513/S			
	VALVES.				
V1	MAZ 7 Base Octal	CV.371/S CV.372/S			
	LAMPS.				
LM1	MES 6V 1.2W } Miniature Ba15 Bulbs				
LM2	MES 6V 1.2W } Holders Type MEM.36				
	MISC.				
HL1	Bulgin 4 Way Type L.4/PC/CH/P.E				
HL2	Belling Lee Coaxial Type L734/P				
	MISC.				
SK2	Belling Lee Coaxial Type L734/S (with L734/P)				

ISSUE 1 ...57

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F.H. Typed L...	2[illegible]..57	R.A. Bra...			

COMPONENT LIST FOR:-
L.F. Adaptor Type LFA.1C.

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SHEET Nº 4 WD [illegible]/S

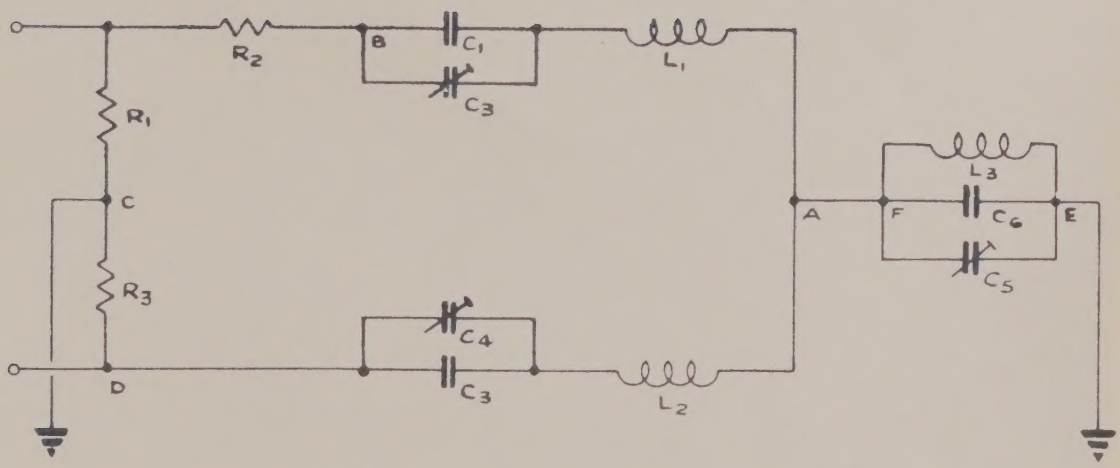

FIG 1 LFA 10 BAND-PASS FILTER CIRCUIT

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